REMARKS

Claims 1-5 and 7-11 and are pending in the present application. Claims 6 and 14 have been withdrawn, claim 1 has been amended, claims 2, and 21-27 have been cancelled, and claims 28-31 have been added, leaving Claims 1-5, 7-11 and 28-31 for consideration upon entry of the present Amendment.

Support for the amendments to claim 1 can be found in the Specification in Paragraph 23 and in claim 2 as originally filed.

Support for new claim 28 can be found in claims 1 and 8 and in Specification Paragraph 23.

Support for new claim 29 can be found in claim 9.

Support for new claim 30 can be found in claim 10.

Support for new claim 31 can be found in claim 11.

Claims 21-27 have been cancelled merely to facilitate prosecution and with no prejudice to the subject matter contained therein.

No new matter has been introduced by these amendments. Reconsideration and allowance of the claims is respectfully requested in view of the above amendments and the following remarks.

Claim Objections

Claim14 stands objected to as failing to further limit the subject matter of a previous claim. Claim 14 has been amended to delete dependency from claim 12, thus obviating the rejection.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-2 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Goodman et al. (WO 99/54784).

Goodman et al. is directed to the use of multi-photon excitation to fabricate structural features having dimensions of less than about 1 micron. (Abstract)

In making the rejection, the Examiner points to page 15 of Goodman et al. in which bisarylazides are disclosed as possible crosslinking agents. (paper 200501718, page 14)

Claim 2 has been cancelled and several of the photoactivatable groups from claim 2 have been added to claim 1. Noticeably absent are the bisarylazides. As this is the only photoactivatable group fulfilling the claim limitations that was disclosed in Goodman et al., this rejection is now moot.

For at least the foregoing reasons, reconsideration and withdrawal of the previous rejection under 35 U.S.C. § 103(a) are requested.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 1-5, and 7-11 stand rejected under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner appears to be confused by the language "point volume of activation". Applicants maintain that one of skill in the art would understand what is meant by a point volume of activation.

The Examiner maintains that "the specification does not make clear what point volume is meant by 'point volume of the activation'". (Paper 20060210, page 8) As described in the Specification on Page 16, paragraph 23, the method is a photochemical method suitable for the formation of structures "built up from elements with point volumes having dimensions of less than about 1 micron". Also as described in paragraph 23, two photon wide field excitation allows the formation of structures having individual point volumes with "X-Y dimensions of less than about 300 nm and optionally a Z-dimension of less than about 500 nm" while three-photon far field excitation allows the formation of structures comprising individual point volumes with "X-Y dimensions of less than about 250 nm and optionally a Z-dimension of less than about 300 nm. An advantage of the use of multi-photon excitation as presently claimed is "the ability of multi-photon excitation to probe deeply into a bulk or solution phase sample with an unprecedented degree of control in the x- and y-, as well as z-directions, with only minimal optical effects above and below the focal point, proteins can be accurately and precisely connected with reactive sites on naturally occurring tissues". (Specification, Paragraph 27) Thus, because multi-photon excitation is used in the claimed method, the point volume of activation from the multi-photon source is the same as the point volume of the structure produced.

In making the rejection, the Examiner has suggested that the Applicants should provide evidence to support their position that the term "point volume of activation" is understood by one of skill in the art to refer to both the volume of the source of activation as well as the volume of the features produced. In support of their contention, Applicants refer to Kawata et al. "Finer Features for Functional Microdevices", Nature 412, pp. 697-98 (2001). (Attached hereto as Appendix A) This reference has been cited over 200 times and is considered to be a seminal paper in the field of multi-photon fabrication. This reference describes two-photon polymerization reactions used to create three-dimensional structures. The use of two-photon polymerization as exemplified in Kawata et al shows that "the diffraction limit can be exceeded by non-linear effects to give a sub-diffraction limit spatial resolution of 120 nanometers". It is stated that "By pinpoint-scanning the laser focus according to pre-programmed patterns, designs can be faithfully replicated to matter structures". On page 697, bottom of col. 1 to col. 2, it is stated that "Polymerization occurred only in the vicinity of the focal spot". In fact, it is the precise control of polymerization within the focal spot that allows the formation of the detailed bull structure shown in Figure 1. Thus, the multi-photon polymerization is useful to create high-resolution structures precisely because the point volume of the light source is the same as the three-dimensional features produced, allowing the controlled production of structures having submicron three-dimensional structures.

With respect to claims 1-5 and 7-11, these claims refer to the "point volume of activation", which clearly refers to the point volume of the multi-photon excitation used to perform the photoactivation. Of necessity, the features produced have the same point volumes as the point volume of activation.

Merely to facilitate prosecution, claim 1 has been amended to specify that the three-dimensional structure is "built up from elements with point volumes having at least one dimension of less than about 1 micron". As explained previously, this amendment adds no new matter to claim 1 as the point volume of activation and dimensions of the features produced are the same. As amended, claim 1 clearly specifies that the point volume of the light source and that of the features produced have at least one dimension of less than one micron. As the Examiner considered that the limitation of point volume of activation applies to both the imaging

source and the final product dimension during examination, this amendment does not present any issues requiring new search and consideration. (Paper 20060210, page 8)

For at least the foregoing reasons, reconsideration and withdrawal of this rejection under 35 U.S.C. § 112, second paragraph are requested.

Claim Rejections Under 35 U.S.C. § 102(b)

Claims 21-26 stand rejected under 35 U.S.C. § 102(b), as allegedly unpatentable over US PN 4,197,133. Claims 21-22, 25-27 stand rejected under 35 U.S.C. § 102(b), as allegedly unpatentable over US PN 5,518,864. Claims 21-23 and 25-27 stand rejected under 35 U.S.C. § 102(b), as allegedly unpatentable over US PN 4,433,043. Claims 21-23 and 25-26 stand rejected under 35 U.S.C. § 102(b), as allegedly unpatentable over Cao et al, Polymer International. Claims 21 and 25-26 stand rejected under 35 U.S.C. § 102(b), as allegedly unpatentable over US PN 3,265,772. Claims 21-22 and 25-26 stand rejected under 35 U.S.C. § 102(b), as allegedly unpatentable over US PN 4,602,097. Claims 21 and 26 stand rejected under 35 U.S.C. § 102(b), as allegedly unpatentable over WO 93/16131. Claims 21 and 26 stand rejected under 35 U.S.C. § 102(b), as allegedly unpatentable over WO 97/07161. Claims 21 and 26-27 stand rejected under 35 U.S.C. § 102(b), as allegedly unpatentable over US 2003/0194715. Claims 21 and 26-27 stand rejected under 35 U.S.C. § 102(b), as allegedly unpatentable over US PN 5,637,460. Claims 21-27 have been cancelled, thus obviating theses rejections.

For at least the foregoing reasons, reconsideration and withdrawal of the previous rejection under 35 U.S.C. § 102(b) are requested.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130

Respectfully submitted,

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